The Miseducation of America on 5G: The New York Times Gets It Spectacularly Wrong

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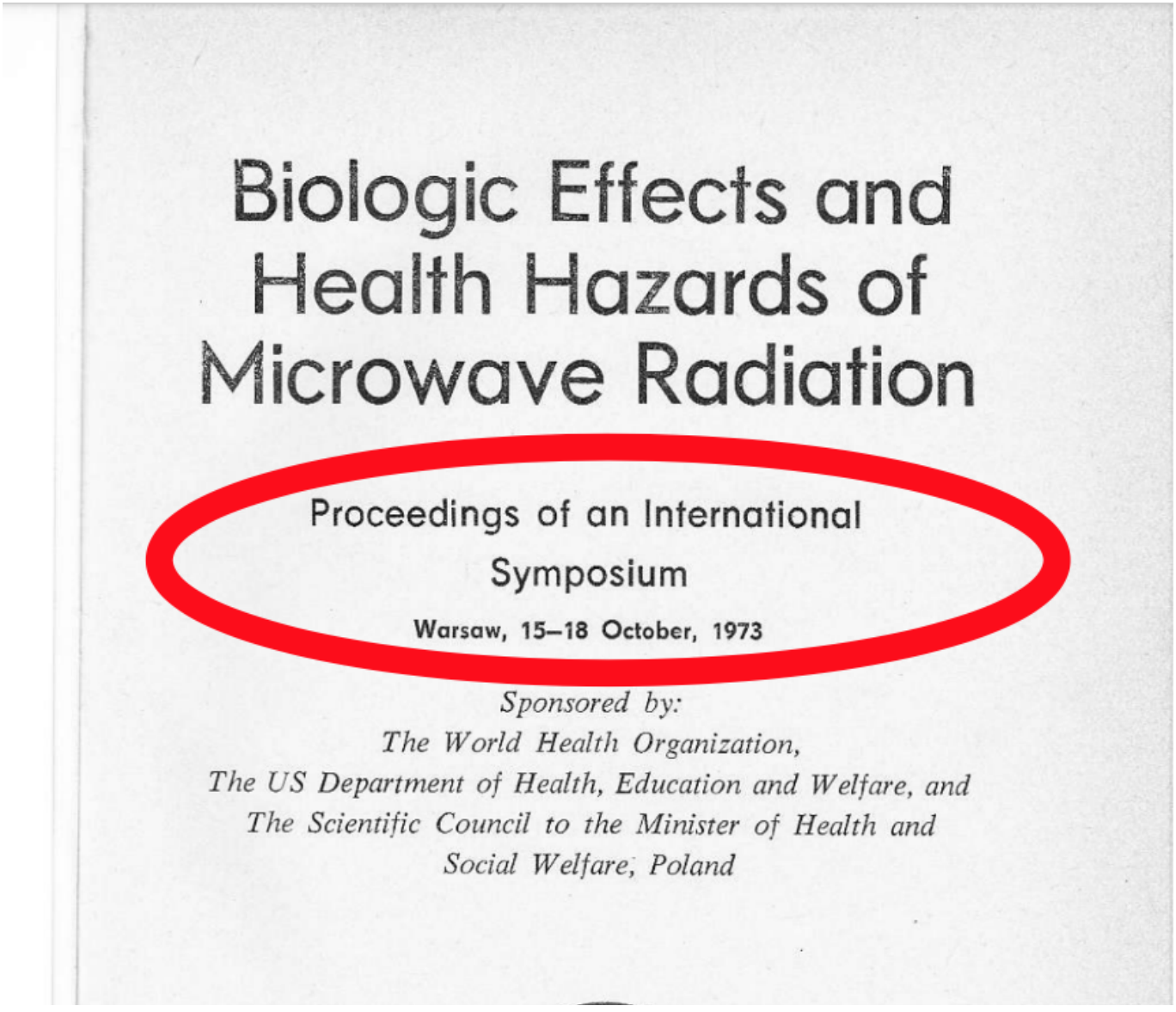
When William J. Broad, a Pulitzer-Prize winning *New York Times* science writer, strangely mangles information on the dangers of 5G, this plays right into the hands of those determined to advance this never-tested technology without serious examination of its long-term impact on human health and the environment.

The recent headline of the NYTimes trumpeted 5G as the "health hazard that isn't." Not so fast. A close examination of claims in that article indicates that it is time for a reset on the march to the latest wireless technology as the consequences could not be more monumental.

Ten Corrections to William J. Broad's
"The 5G Health Hazard That Isn't" New York Times July 16, 2019

Issued by Devra Davis, PhD, MPH, President, Theodora Scarato, MSW, Executive Director, Environmental Health Trust.

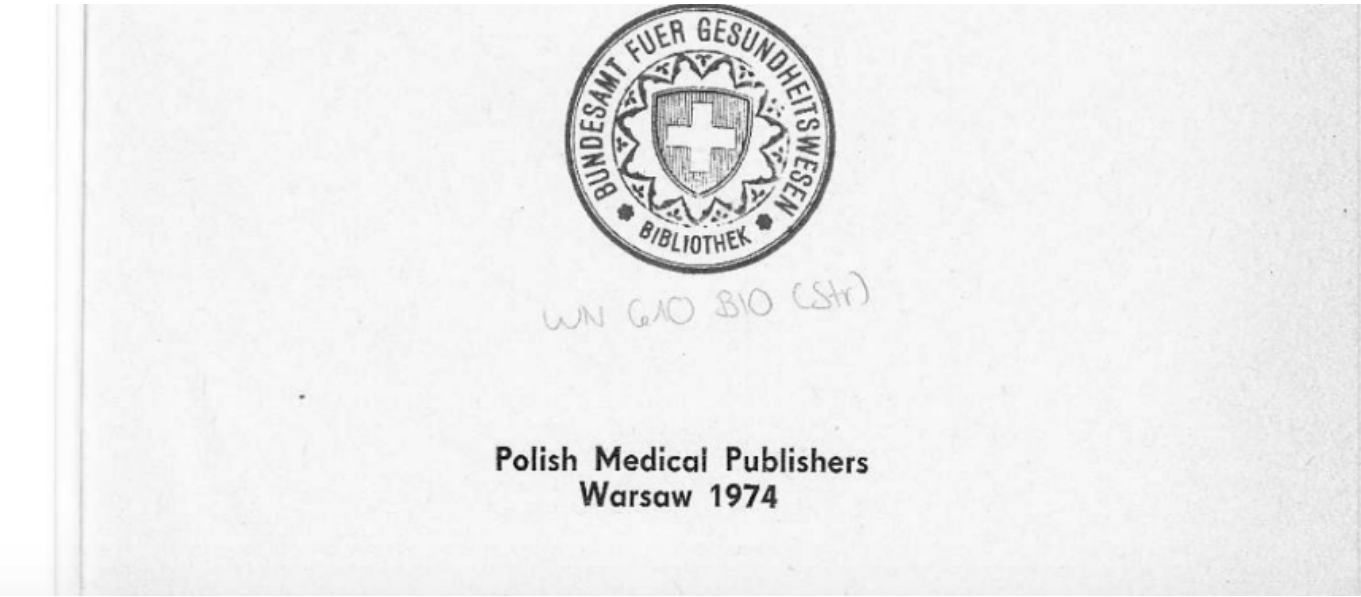
1. **First of all, contrary to Broad's claim, Dr. Curry's report and graph on wireless radiation risks to children in schools in 2000 were not the central foundation for scientific concerns regarding wireless radiation.**


Biologic Effects and Health Hazards of Microwave Radiation

Proceedings of an International Symposium

Warsaw, 15–18 October, 1973

Sponsored by:
The World Health Organization,
The US Department of Health, Education and Welfare, and
The Scientific Council to the Minister of Health and Social Welfare, Poland



WHO 1973 Conference Proceedings

- Long before 2000, scientists had investigated and confirmed numerous biological health impacts of electromagnetic (EMF) radiation.
- For over two decades, the US EPA had a robust research program on electromagnetic fields (EMF) that was expressly defunded by Congress in 1995, shortly after the EPA briefed the FCC about plans for developing EMF safety standards.
- As a result, no federal agency has responsibility for setting standards for public safety from exposures to EMF that include radiofrequency radiation (RF), also known as microwave or wireless radiation.

2. In fact, in contradiction to Broad's assertion, Curry's graph showing greater absorption with higher frequency of wireless radiation up to 3G was correct and directly applicable to schools.

- Curry's graph showing brain tissue absorption of RF came directly from laboratory research commissioned by the U.S. Air Force and was not a manipulation of data — as Broad claims.
- Broad alleges that Curry's graph was "wrong" because higher and faster 5G millimeter waves don't penetrate the skin. In fact, Curry's chart had nothing to do with the frequencies of 5G, but solely with the lower and slower wireless frequencies in use at that time about which there is no debate that Wi-Fi penetrates the body and brain as does Wi-Max.

- Wireless radiation frequencies get faster and higher, the depth of penetration goes down but the rate of absorption goes up.
- A graph from Curry's second report to the school district (also cited by Broad) references "absorption into a slab of grey matter" — otherwise known as the brain. Broad incorrectly captioned Curry's graph in the NYT story as showing "tissue damage," rather than "absorption" the word used in this graph shown below.

3. The NYTimes graph on 5G frequencies is wrong, because it incorrectly indicates that 5G devices will start at 3000 MHz (3 GHz), when in fact companies have stated that 5G will use the same frequencies as current cell phones — as low as 600MHz, *in addition to* higher frequencies.

- The Wireless industry is clear that for 5G phones, routers, and systems to work, they must use a full range of frequencies, from low to middle to high, as well as higher millimeter-wave frequencies never used in mass-scale before (from 600 MHz up to around 50,000 MHz and higher into Terahertz for 6G). T-Mobile, for example, will use 600 MHz while AT&T is using 39 GHz in it's 5G test cities.

- New 5G phones will have multiple antennas emitting multiple frequencies and modulations all at the same time. Think Bluetooth,Wi-Fi, Mobile hotspot and LTE on top of the multiple 5G antennas in just one phone.

- As the American Academy of Pediatrics has noted in their letters to Congress, *lower* frequencies are absorbed deeply into brains and bodies, especially in children, because the skull of the young child is thinner than that of the adult, the neurons of their developing brains not fully myelinated, and their brains contain more fluid. As a consequence, the children will absorb proportionally more wireless radiation per exposure into the brain than adults, a point that Curry also makes in his reports.

- Broad's misrepresentation of 5G as not including these lower frequencies is the foundation for his erroneous conclusion that the skin is "a barrier" to 5G. We wrote Broad, but he refused to correct.

- By email, Marvin Ziskin clarified that his statement quoted by Broad that "5G emissions, if anything, should be safer" applied **solely** to the higher frequencies to be used in 5G as they did not penetrate into the body as deeply. Apparently, his statement did not apply to the slower and lower frequencies that are well known to be absorbed past the skin.

4. Broad errs in reporting the assertion of radiation physicists that radio waves become "safer" at higher frequencies because human skin purportedly "acts as a barrier." The skin does not just act as a mirror deflecting the radiation.

- 5G's faster mmWave frequencies between 30 and 300 GHz are **absorbed into** and just below the surface of the skin, and such exposure is biologically impactful. That is why the U.S. Defense Department developed weapons with high-powered millimeter waves as seen here. The Active Denial System (ADS), also known as the Pain-Ray, was deployed to Afghanistan, tested in prisons and considered as a pirate deterrent in Somalia.

- The military grounds for concluding that the Pain-Ray does not cause cancer after long-term exposure rests on a single three-month-long animal study involving two exposures per week. Further, the expert review alleges that blinking would spare eyes from harm. “The eyes would have to be held open to achieve damage“ and in a 2009 review ”Researchers learned that the human eye reflexively blinks within a quarter of a second of detecting millimeter waves, quickly protecting the eyes.” So do we stream movies superfast with our eyes closed? What about children’s developing eyes glued to 5G Virtual Reality streaming into classrooms?

- Wireless 5G networks will use beams of radiation like the Pain-Ray, and include Massive MIMO (multiplex in and multiplex out) and phased arrays meaning each installation could consist of numerous antennas simultaneously sending and receiving beaming waves into neighborhoods.

- A 2019 European Parliament Report notes, “The 5G radio emission fields are quite different to those of previous generations because of their complex beamformed transmissions in both directions — from base station to handset and for the return. Although fields are highly focused by beams, they vary rapidly with time and movement and so are unpredictable.” Because of this, that report concludes, “It is not possible to accurately simulate or measure 5G emissions in the real world.”

- As our largest organ (~20 square feet), the skin is not a "barrier" but a filter that interacts with chemicals and EMF, that can produce systemic effects on the immune system and specific organs. Poison Ivy and peanuts need only touch the surface of the skin to set off an occasionally fatal reaction. A number of medicines are delivered through skin patches absorbed throughout the body. Babies born with jaundice are treated with intense light that penetrates through the skin to their blood that becomes transformed in their livers.

- As with all drugs in medicine or chemicals in the environment, biological impact depends on who gets exposed to how much under what specific conditions. For instance, a fair-skinned baby and her darker-skinned mother can have the same exposure to the sun with profoundly different results.

5. Contrary to what the NYTimes article asserts, studies find that as RF frequency increases past 10 GHz, the intensity of the rate of absorption does increase, despite the shallow penetration.

- Researchers investigating the impact to the skin from 5G's higher millimeter frequencies are "raising the warning flag" on the safety of 5G after finding that human sweat ducts absorb these frequencies at much higher rates than in surrounding skin structures — acting as tiny helical EMF antennas to magnify these signals.

- The video below shows one of those researchers, Paul Ben-Ishai, PhD, lecturer in the Department of Physics, Ariel University, Israel explaining how 5G millimeter waves interact with the skin. Ben-Ishai also wrote a letter to California Governor Brown on 5G.

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Swiss government and private sector researchers caution that 5G frequencies can cause big increases in temperature that "may lead to permanent tissue damage after even short exposures."

- For insects, a new simulation study finds that their bodies can absorb up to three times more power from 5G that could lead to major changes in how they behave and function, affecting the capacity of bees and other insects to pollinate crops.
- Published reviews on 5G, millimeter waves and wireless (even from decades ago) have cataloged a host of harmful impacts including increased temperature, altered gene expression, faster cell growth, inflammatory and metabolic processes, damage to the eyes and cellular stress, memory problems, sperm damage, genetic damage, behavior issues and brain damage.

6. Contrary to the NYTimes statement, "mainstream scientists continue to see no evidence of harm from cellphone radio waves," more than 244 experts in the field of bioelectromagnetics have asked the United Nations to call for a moratorium on 5G.

- They note that while exposures have risen many fold, so have studies showing damage to human health and the environment.
- Astonishingly, Broad omitted any mention of the fact that an independent panel in 2011 advised the World Health Organization's International Agency for Research on Cancer (WHO/IARC) that cellphone and other wireless RF radiation should be classified as a "possible human carcinogen," based on evidence from studies carried out up to that date.
- Nor does Broad report more recent analyses from scientists who have been senior advisors to the WHO and the NIH on bioelectromagnetics concluding that the FDA is

downplaying clear evidence of cancer in the National Toxicology Program study, later corroborated by the Ramazzini Study, or that a growing number of scientists say RF is a "human carcinogen."

- In light of this mounting research, the WHO/IARC advisory group released 2019 "high priority" recommendations to reevaluate the cancer hazard from wireless radiation.

7. Broad neglected to mention industry connections of several of his sources.

- Several of the experts quoted in this article have in fact published research directly funded by the wireless industry or by NYU Wireless, "an R&D arm" of NYU's industry affiliates, which include AT&T, Sprint and Crown Castle — the very companies spearheading the rollout of 5G.

- The word "safe" means different things depending who you talk to. Industry reports define 'safe" as compliance with outdated FCC government limits despite the fact that these limits are based on thirty year old science. "Safe" is also conflated with "less penetration" into the body- another erroneous assumption based on no scientific research. When independent scientists state electromagnetic fields are not "safe" because biological effects are replicated and proven (a fact), the industry connected scientist response is often that these biological effects "are not the same as *health* effects." This is no better exemplified in this presentation where "consistent evidence" of physiological changes during sleep are found, yet "these effects do not translate into any measure we can use to describe disturbances." When brain tumors, tumor promotion, genetic damage, memory problems, oxidative stress,brain wave changes, behavior issues in children, miscarriage, sperm damage, efflux of calcium ions and blood brain barrier permeability studies *are replicated,* the response is that it is "unclear," "difficult to draw conclusions," "the functional significance cannot be determined" and "more studies need to be done." When asked why authorities do not issue clear protections for children, they say the exposure is "low" and "society as a whole should decide" and it's difficult to prove safety."

- Unfortunately, the field of EMF research has been plagued with industry loyal experts, that have influenced federal agencies and research sponsorship bias, where

works underwritten by industry tend to find no effect, while those few that are independently funded do report impacts.

- When Broad was questioned as to why he omitted industry affiliations in his March 2019 article claiming Russia was fomenting 5G health concerns, Broad responded in an email to EHT Executive Director Scarato that "*We do point out industry financial support when it seems appropriate. It's a judgment call.*"

8. Broad cites the lack of a marked uptick in brain cancer rates as proof of RF safety. This misunderstands the long latencies for brain cancer and also fails to consider that several other cancers plausibly tied with cellphone use are increasing in young adults.

- Cancers do not occur immediately after exposure to a causative agent and usually take years to several decades to be diagnosed. Widespread rises are not expected to be evident in today's statistics.

- New analysis by the U.S. Centers for Disease Control and others show that non-Hodgkin lymphomas, central nervous system tumors (CNST) (including brain cancers), renal, hepatic and thyroid tumors have increased recently among Americans under 20 years old.

- Perhaps more importantly, cancer is not the sole indicator of a problem. The Cleveland Clinic advises men who wish to father healthy children to remove phones from their pockets, because there is growing evidence that exposures can damage sperm. Sterility and infertility continue to rise in many countries. While factors accounting for this are complex, exposures to wireless radiation are relevant.

9. Broad's article fails to report on a number of major policy efforts to restrict 5G due to concerns about the lack of safety data, including the following developments:

- The European Environmental Authority ranked the impact of 5G as "high" due to "the possibility of unintended biological consequences."

- Swiss Re and Lloyd's have compared 5G and wireless to asbestos as "high" risk and most companies will not underwrite coverage for health damages.

- The State of New Hampshire passed HB522 establishing a commission on the health and environmental effects of 5G. One of the tasks of the Commission is to answer the question," Why have more than 220 of the worlds leading scientists signed an appeal to the WHO and the United Nations to protect public health from wireless radiation and nothing has been done?"

- The State of Louisiana passed HR 145 requesting authorities to study the environmental and health effects of 5G.

- Over a dozen municipalities in Italy have issued resolutions for precaution on 5G, as have several other localities in the world.

- Several US members of Congress have written the FCC asking for proof of safety of 5G and result was "unsatisfactary." Read the letters and responses here.

- The Ninth Circuit Court of Appeals, over industry objections, upheld the City of Berkeley's cell phone right to know ordinance requiring retailers to inform consumers that cellphones emit radiation and that "if you carry or use your phone in a pants or shirt pocket or tucked into a bra when the phone is ON and connected to a wireless network, you may exceed the federal guidelines for exposure to RF radiation."

- A published analysis of cell phone radiation tests completed by the government of France shows when phones are touching the skin, they can exceed US FCC radiation limits up to 11 times, depending on the model.

- Oregon passed SB 283, a Bill that directs the Health Authority to review independently-funded scientific studies of the health effects of wireless, especially for school exposures.

- Cyprus just launched a major public educational campaign to reduce children's wireless exposures (as have several countries) and has removed wireless from the pediatric intensive care units of Archbıshop Makarıos III Hospital.
- The first major US medical conference for doctors on the health effects of electromagnetic radiation will be held this September in California.

10. Broad refuses to correct the inaccuracies of his articles and the Times persists in demeaning critics and concerned citizens.

Despite ample documentation of the need for corrections, the NYT refuses to correct their misleading and deceptive articles about 5G and cellphone radiation.

Broad's 5G articles have been picked up by medical platforms and media nationwide, and are invoked as proof of safety by the former FCC Chairman Tom Wheeler who is also former Head of the CTIA-The Wireless Association. A 2015 Harvard Report documents how the heavy Congressional lobbying of the multibillion-dollar wireless industry coupled with the revolving door between industry and government has resulted in undue industry influence into the science and policy of wireless radiation.

The NYT article included a belittling graphic showing people fleeing in fear from a cell tower, mocking those who are working for safe neighborhoods and schools and the many nations that reduce children's exposure and do not permit towers near schools and hospitals, but did not reference a major investigative journalism analysis indicating serious grounds for concern.

Broad tweeted the story with “He was a very bright guy.”

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As Senator Patrick Moynihan stated, “Everyone is entitled to his own opinion, but not his own facts.” We call upon the New York Times to correct the misinformation.

This was penned by Devra Davis, PhD, MPH, President and Theodora Scarato, MSW, Executive Director of Environmental Health Trust (EHT).EHT maintains scientific resources on 5G.

Note: Louis Slesin of Microwave News also reported on the inaccuracies in the New York Times article at “A Fact-Free Hit on a 5G Critic: Fabricating History on the New York Times Science Desk”.

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“The 5G Health Hazard That Isn’t” New York Times 7/16/19 July 16, 2019

Curry PhD, Report on Wi-Fi in Schools, February 24, 2000

Curry PhD, Report on Wi-Fi in Schools, September 29, 2000

Health 5g Wireless Radiatin New York Times Cell Phone